

INVASIVE SPECIES CONTROL PROJECTS (R1 SMALL GRANTS) CY 2014 FINAL REPORT

Project Title: Willapa Bay *Spartina* Mapping and Eradication

Station: Willapa National Wildlife Refuge Complex (WNWRC)

Contact Person: Eva Kristofik

Project Description: The Willapa National Wildlife Refuge (Willapa NWR) continued a successful program aimed at eradicating the non-native cordgrass, *Spartina alterniflora* (*Spartina*) from Willapa Bay. Treatment areas were within the Willapa Bay Watershed on tidally influenced wetlands and tributaries of the bay. An increase in the spread of *Spartina* over several decades has made it necessary to develop long-term plans to restore and maintain valuable and limited tideland habitats that are at risk of being altered by this invasive grass. Today more than 99% of the *Spartina* has been eliminated, but crews face a daunting job finding the remaining plants spread out over more than 30,000 acres in the complex salt marshes surrounding the Bay.

The grant funding allowed the Refuge to continue to locate and treat *Spartina* infestations and gather data for developing monitoring methods to verify complete eradication. In addition, the funds were used to bring our four member crew on in June, instead of July, allowing us an opportunity to detect early season infestations. Phase I of the project focused efforts on locating and treating individual *Spartina* plants and clones. Phase II included inspection of previously treated areas, searching for new plants, and treatment during the late season when tides were typically more favorable. Phase III focused on inspection and treatment of strategically selected areas based on Phase I and II hot spots. Additionally, *Spartina* remains viable and green late into the season, while the other vegetation turns brown, making it easier to detect. Also, by incorporating technology and field work, the crews had the ability to focus their efforts. To conclude, although we continue to find *Spartina*, we are able to predict which areas need a more focused search, while managing to reduce our number of plants and acres by half this year compared to last.

Invasive Species Targeted: Non-native Cordgrass, *Spartina alterniflora* (*Spartina*)

Project Completion Date or Estimated Completion Date: Phase 1: August 1, Phase 2: September 30, Phase 3: October 29 (Ongoing multiyear multiagency/partner program)

Project Results:

The crew meticulously survey, GPS, mark and treat all *Spartina* detected in the designated areas. They access areas by airboat or vehicle and walk through thousands of acres of mudflats, intertidal and saltmarsh habitats. To increase effectiveness our protocol requires that the entire area is surveyed a minimum of two times each year. In addition, to reduce observer bias we switch survey areas with our partners to cross check each other's work.

All the crews this year, partner agencies included, incorporated the use of iPhones to collect data. This allowed us to upload data instantaneously to Washington State Department of Agriculture (WSDA) and focus our efforts on areas of concern.

The refuge crew was able to locate a total of 284 plants, while our Pacific County partners located an additional 59 in our area of responsibility (see attached map). The total for this year was 343 (down from last years 659 total for the same area). Last year a total of 0.314 acres were located and treated on the Refuge, with less than 1 acre found throughout the Bay.

This year, similar to last year, the crews were finding a large proportion of plants already flowering or seeding well ahead of schedule. Additionally our Washington State University (WSU) partners were collecting seeds from all the crews and testing the viability of seeds found throughout the bay. The preliminary results, from the 2013 season, have shown seeds remain viable; therefore we need to continue treatment.

Number of Acres Treated: WSDA estimates 0.7 acre of *Spartina* were treated throughout the bay this year. A combined total of 0.15 acres of *Spartina* was located and treated on South Bay, Long Island, Leadbetter, and East Hills units on the refuge.

Number of Acres Inventoried and/or Mapped: According to WSDA records, approximately 30,000 acres throughout Willapa Bay is surveyed annually for *Spartina* among all the partners. The Refuge is responsible for the southern portion of Willapa Bay, approximately 3,400 acres. Partners are responsible for portions of our Leadbetter Unit located in the northern-west portion of the bay and the east portion of the bay, from Stanley Peninsula to Bear River. Each partner was able to survey their area of responsibility a minimum of two times, as required.

Number of Acres Restored: As recently as 10 years ago, *Spartina* meadows and clone fields covered 8,500 acres of Willapa Bay's productive mudflats. Today, the native salt marsh has been largely restored and supports important shorebird and waterfowl habitat along with commercial shellfish production. The large thick stands of monoculture have been eradicated, replaced with a thriving intertidal estuary. Continued diligence is required in order to control any future outbreaks and potential spread of *Spartina*.

Total Grant Amount: \$76,000, used for mapping and eradication (see notes below in regards to contribution by partners)

Breakdown of Expenditures:

Category	Total \$ Spent	% of Total Grant
Equipment/Supplies	\$16,140.81	21%
Chemical		
Biocontrol Agents		
Travel		
Biotech/Contractor Salary	\$59,859.19	79%
Restoration Materials		
Other (Describe)		
TOTAL	\$76,000	100%

Matching funds were contributed by the following partners:

- The WSDA provided funding, resources, equipment, and herbicide to state, county, and private landowners. They also coordinated data analysis and reporting among all the partners.
- Pacific County, the Shoalwater Bay Tribe, DNR, and Washington Department of Fish and Wildlife had crews locating and implementing control treatments throughout Willapa Bay.
- Our partners contributed a total of \$390,000 to the eradication efforts allocated for Willapa Bay and an additional \$550,000 state wide.
- WSU provided technical assistance in designing and testing survey and monitoring methods and provided statistical support.